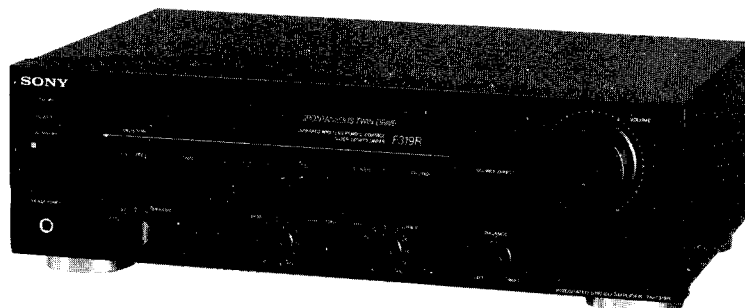


TA-F319R

SERVICE MANUAL

AEP Model
UK Model
E Model



SPECIFICATIONS

Amplifier

Continuous RMS power output (both channels driven simultaneously)

Model for Germany

DIN, 1 kHz	4 ohms	50 W + 50 W
	8 ohms	40 W + 40 W
20 Hz – 20 kHz	4 ohms	—
	8 ohms	30 W + 30 W

Model for Scandinavian countries, Switzerland, Spain and Portugal

DIN, 1 kHz	6 ohms	—
	8 ohms	50 W + 50 W
20 Hz – 20 kHz	6 ohms	—
	8 ohms	40 W + 40 W

Model for other countries

DIN, 1 kHz	4 ohms	—
	8 ohms	50 W + 50 W
20 Hz – 20 kHz	4 ohms	—
	8 ohms	40 W + 40 W

Input

Input jack	Jack type	Sensitivity	Impedance
PHONO	Phono	2.0 mV	50 kilohms
TUNER, CD, AUX, DAT/TAPE 1 TAPE 2	Phono	150 mV	50 kilohms

S/N

PHONO (MM)	—
TUNER, CD, AUX, DAT/TAPE 1 TAPE 2	100 dB

Output

Output jack	Jack type	Voltage/impedance
REC OUT	Phono jack	Voltage 150 mV Impedance 1 kohm
HEADPHONES	Stereo phono jack	Accepts low and high impedance headphones

Tone controls

	Response	Turnover frequency
BASS	±7 dB (100 Hz)	300 Hz
TREBLE	±6 dB (10 kHz)	5 kHz



INTEGRATED STEREO AMPLIFIER
SONY®

Harmonic distortion	Less than 0.03% at 10 W output
Intermodulation (IM) distortion (60 Hz : 7 kHz = 4:1)	Less than 0.03% at 10 W output
Frequency response	PHONO: RIAA equalization curve ±0.5 dB TUNER, CD, AUX, DAT/TAPE 1, TAPE 2: 7 Hz – 100 kHz ± 3 dB Less than 170 μ V (network A) 50 (8 ohms, 1 kHz)
Residual noise	
Damping factor	

General

System	Preamplifier: Low-noise, equalizer amplifier Power amplifier: Pure-complementary SEPP OCL power amplifier with all stages directly coupled
Power requirements	UK model : 240 V AC, 50/60 Hz AEP, Germany model : 220 V – 230 V AC, 50/60 Hz E model : 120 V, 220 V or 240 V AC adjustable, 50/60 Hz
Power consumption	130 W
Dimensions	Approx. 430 x 135 x 315 mm (w/h/d) (17 x 5 $\frac{3}{8}$ x 12 $\frac{1}{2}$ inches)
Weight	Approx. 6.3 kg (13 lb 14 oz)
Supplied accessories	Remote commander RM-S311 (1) Sony SUM-3 (NS) batteries (2)

The above values are measured at 230 V AC. (Models for European countries)

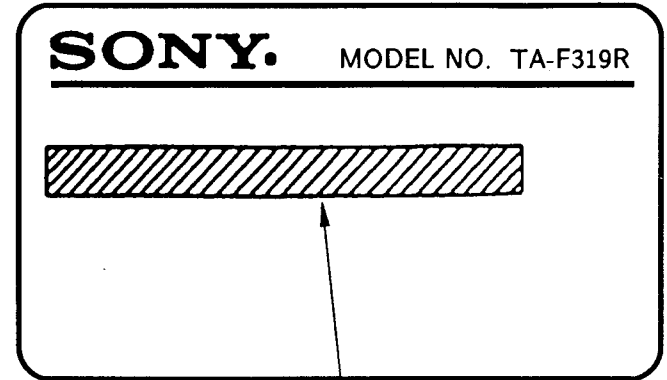
Design and specifications are subject to change without notice.

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

MODEL IDENTIFICATION

- Specification Label Printed on Back Panel -



AEP, Germany Model : AC : 220 - 230V ~ 50/60Hz

UK Model : AC : 240V ~ 50/60Hz

E Model : AC : 120/220/240V ~ 50/60Hz

Note :

There are two type of AEP models which are depend on countries.

AEP2 model : Model for Scandinavian countries,
Switzerland, Spain and Portugal

AEP1 model : Model for other European countries

TABLE OF CONTENTS

Section	Title	Page
Specifications	1
Model Identification	2
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3. DIAGRAMS		
3-1. Block Diagram	5
3-2. Circuit Boards Location	7
3-3. Printed Wiring Boards	10
3-4. Schematic Diagram	15
3-5. IC Block Diagram	19
4. EXPLODED VIEWS		
4-1. Front Panel Section	20
4-2. Chassis Section	21
5. ELECTRICAL PARTS LIST	22

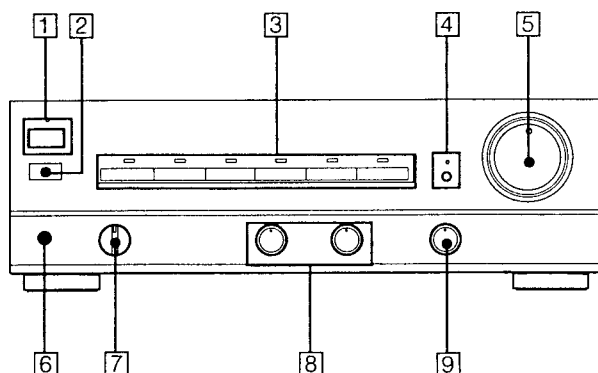
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED LINE WITH MARK Δ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1 GENERAL

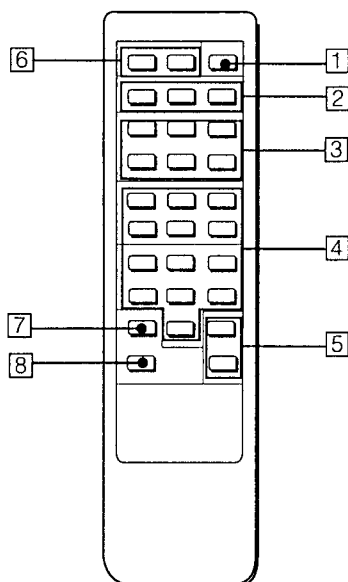
Identifying the Parts and Controls

This section describes about each name of this amplifier and remote commander.



Front Panel

- ① POWER switch and STANDBY indicator
- ② Remote control sensor
- ③ Function selectors and indicators (MONITOR indicator: Only for TA-F319R)
- ④ SOURCE DIRECT button and indicator
- ⑤ VOLUME control and indicator
Adjusts the sound level.
Immediately after turning on the POWER switch, the VOLUME indicator blinks when the built-in muting circuit activates and the unit detects shorting of circuit of the speaker outputs or in case of short-circuit of the inputs of DC components. In such case, turn off the unit and check the connected components and speaker system. (For TA-F319R, the VOLUME indicator does not blink.)
- ⑥ HEADPHONES jack
- ⑦ SPEAKERS selector
- ⑧ TONE (BASS/TREBLE) controls
- ⑨ BALANCE control



RM-S311

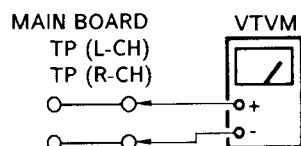
Remote Commander

- ① POWER switch
- ② TUNER operation buttons
TUNER: Select the TUNER mode.
PRESET +/- buttons: Select the preset station.
- ③ CD operation buttons
◀▶▶▶: Automatic music sensor.
D. (Disc) SKIP: Disc skip (for CD player equipped with a multi-disc changer)
▶: The amplifier enters the CD mode and the CD player starts playback automatically.
■: Stop.
⏸: Pause.
- ④ TAPE 2 DECK A/DECK B operation buttons
◀▶▶▶: Fast winding.
■: Stop.
◀: The amplifier enters the TAPE 2 mode and the tape deck starts reverse playback automatically.
▶: The amplifier enters the TAPE 2 mode and the tape deck starts forward playback automatically.
●: Recording.
⏸: Pause. (Only for DECK B)
- ⑤ VOL (Volume) +/- buttons
- ⑥ PHONO operation buttons
START: Pressing START automatically selects the PHONO mode on the amplifier and starts playback of the turntable system.
STOP: Stops playback of the turntable system.
- ⑦ DAT/TAPE 1 button
Selects the DAT or TAPE 1 mode.
- ⑧ AUX button
Selects the AUX mode.

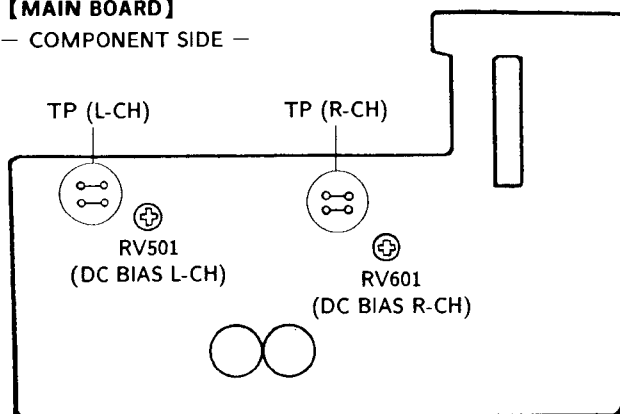
SECTION 2 ELECTRICAL ADJUSTMENTS

Note :

1. DC BIAS adjustments should be made within 2 to 3 minutes after the POWER switch is turned on (POWER ON).
2. After replacing the power transistors, DC BIAS adjustments should be made.

DC Bias Adjustment (with no signal input)**Procedure :**

	Adjustment part	Reading on VTVM
L-CH	RV501	6.5mV
R-CH	RV601	6.5mV

【MAIN BOARD】
 — COMPONENT SIDE —


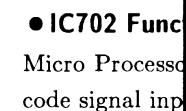
3-1. BLOCK DIAGRAM



TRANS

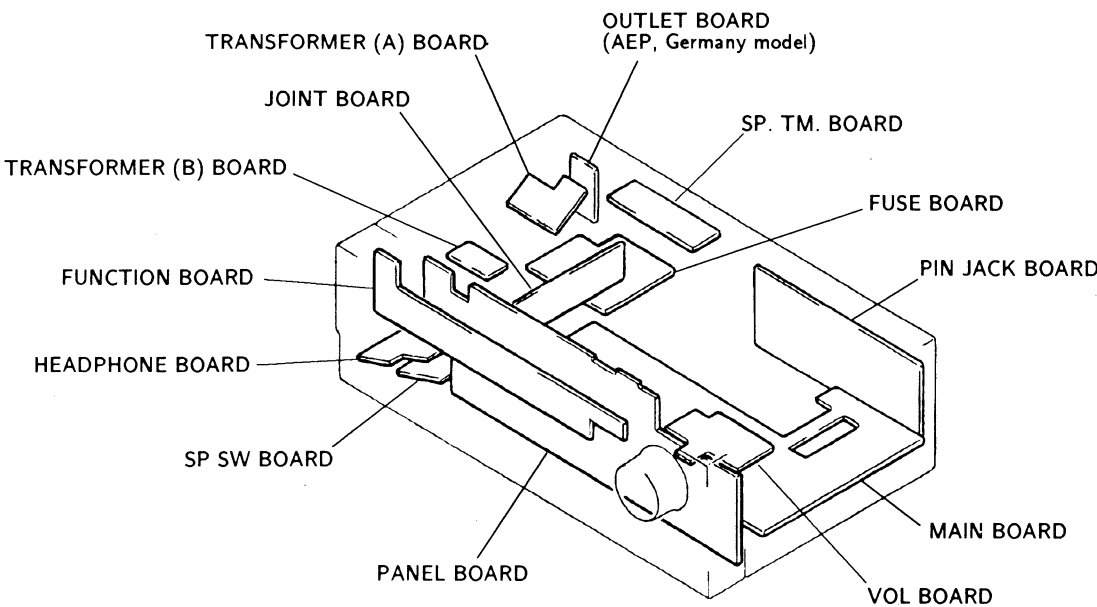
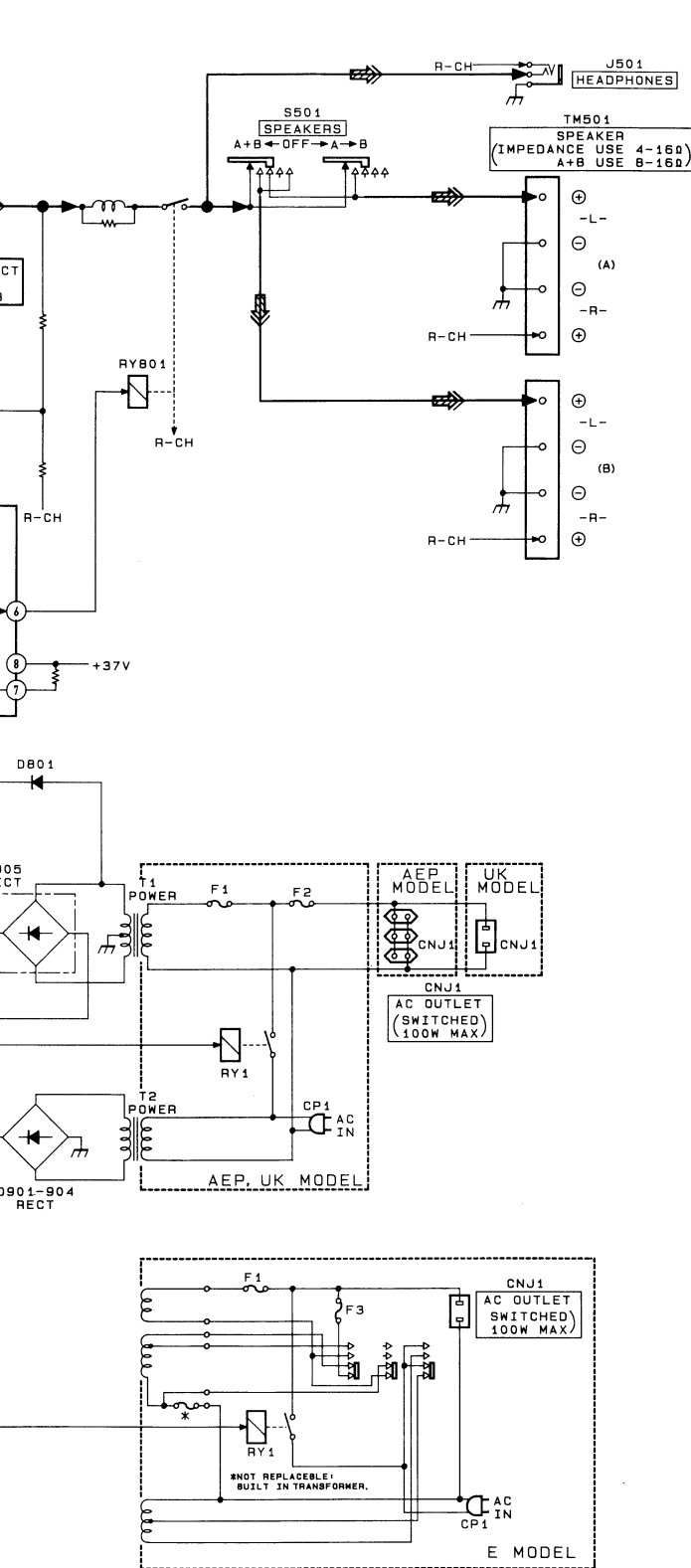
FV

HEA



Pin No.	P
1	PH
2	CD
3	AU
4	CN
5	VS
6	TA
7	TU
8	PO
9	TA
10	PO
11	MC
12	NO
13	RE
14	X C
15	X M
16	NO
17	SH
18	VO
19	VO
20	VD

3-2. CIRCUIT BOARDS LOCATION

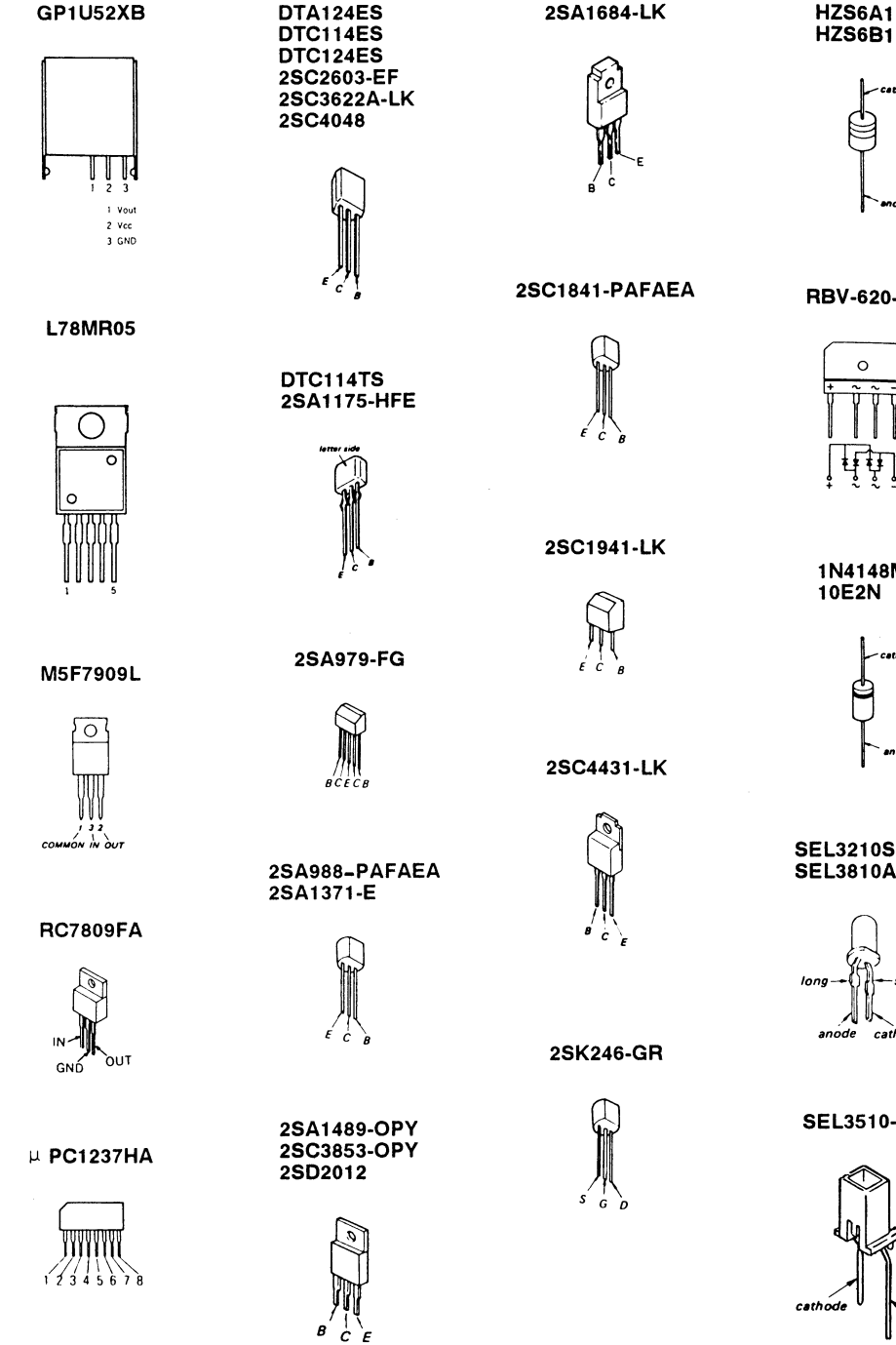


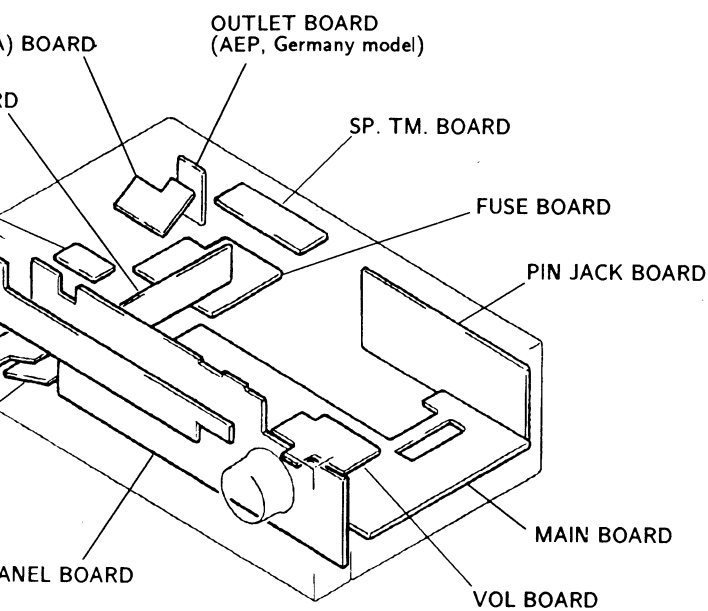
● IC702 Function Controller (M50761-291P)

Micro Processor M50761-291P is used for control the volume up/down, function select and power on/standby by SIRCS code signal input and power on/standby key code signal input.

Pin No.	Pin Name	I / O	Description						
1	PHONO	O	Function select output. (one-shot output) (L : PHONO)						
2	CD	O	Function select output. (one-shot output) (L : CD)						
3	AUX	O	Function select output. (one-shot output) (L : AUX)						
4	CN VSS	—	Ground						
5	VSS	—	Ground						
6	TAPE1	O	Function select output. (one-shot output) (L : TAPE1)						
7	TUNER	O	Function select output. (one-shot output) (L : TUNER)						
8	POWER	O	Power supply ON/OFF relay (RY1) control output. (L : POWER ON, H : POWER OFF)						
9	TAPE2	O	Function select output. (one-shot output) (L : TAPE2)						
10	POWER IN	I	POWER ON/STANDBY key switch input.						
11	MODE	I	Mode select input. This model is used "H" level only. <table><tr><td></td><td>POWER ON/OFF mode</td></tr><tr><td>H</td><td>USED</td></tr><tr><td>L</td><td>NOT USED</td></tr></table>		POWER ON/OFF mode	H	USED	L	NOT USED
	POWER ON/OFF mode								
H	USED								
L	NOT USED								
12	NC	—	Ground						
13	RESET	I	Reset signal input.						
14	X OUT	O	Ceramic vibrator connection terminal. (400Hz)						
15	X IN	O	Ceramic vibrator connection terminal. (400Hz)						
16	NC	—	Ground						
17	SIRCS	I	SIRCS code signal input. (serial input)						
18	VOL UP	O	Volume motor up control output. (contineous output)						
19	VOL DOWN	O	Volume motor down control output. (contineous output)						
20	VDD	—	+5V power supply.						

• SEMICONDUCTOR LEAD LAYOUTS



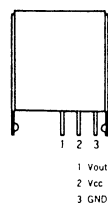


1P)
control the volume up/down, function select and power on/standby by SIRCS
code signal input.

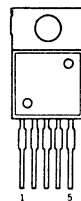
Description	
select output. (one-shot output) (L : PHONO)	
select output. (one-shot output) (L : CD)	
select output. (one-shot output) (L : AUX)	
select output. (one-shot output) (L : TAPE1)	
select output. (one-shot output) (L : TUNER)	
ply ON/OFF relay (RY1) control output. ER ON, H : POWER OFF)	
select output. (one-shot output) (L : TAPE2)	
ON/STANDBY key switch input.	
ct input. This model is used "H" level only.	
	POWER ON/OFF mode
	USED
	NOT USED
al input.	
ibrator connection terminal. (400Hz)	
ibrator connection terminal. (400Hz)	
de signal input. (serial input)	
otor up control output. (contineous output)	
otor down control output. (contineous output)	
r supply.	

• SEMICONDUCTOR LEAD LAYOUTS

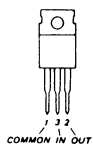
GP1U52XB



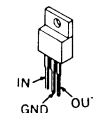
L78MR05



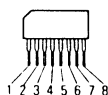
M5F7909L



RC7809FA



PC1237HA



DTA124ES
DTC114ES
DTC124ES
2SC2603-EF
2SC3622A-LK
2SC4048



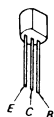
DTC114TS
2SA1175-HFE



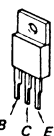
2SA979-FG



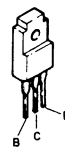
2SA988-PAFAEA
2SA1371-E



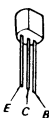
2SA1489-OPY
2SC3853-OPY
2SD2012



2SA1684-LK



2SC1841-PAFAEA



2SC1941-LK



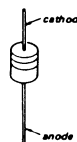
2SC4431-LK



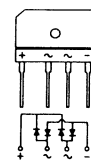
2SK246-GR



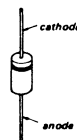
HZS6A1L
HZS6B1L



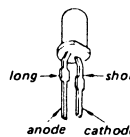
RBV-620-01



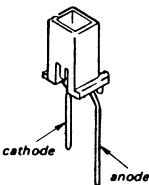
1N4148M
10E2N



SEL3210S-CD
SEL3810A-CD



SEL3510-CD



• SEMICONDUCTOR LOCATION

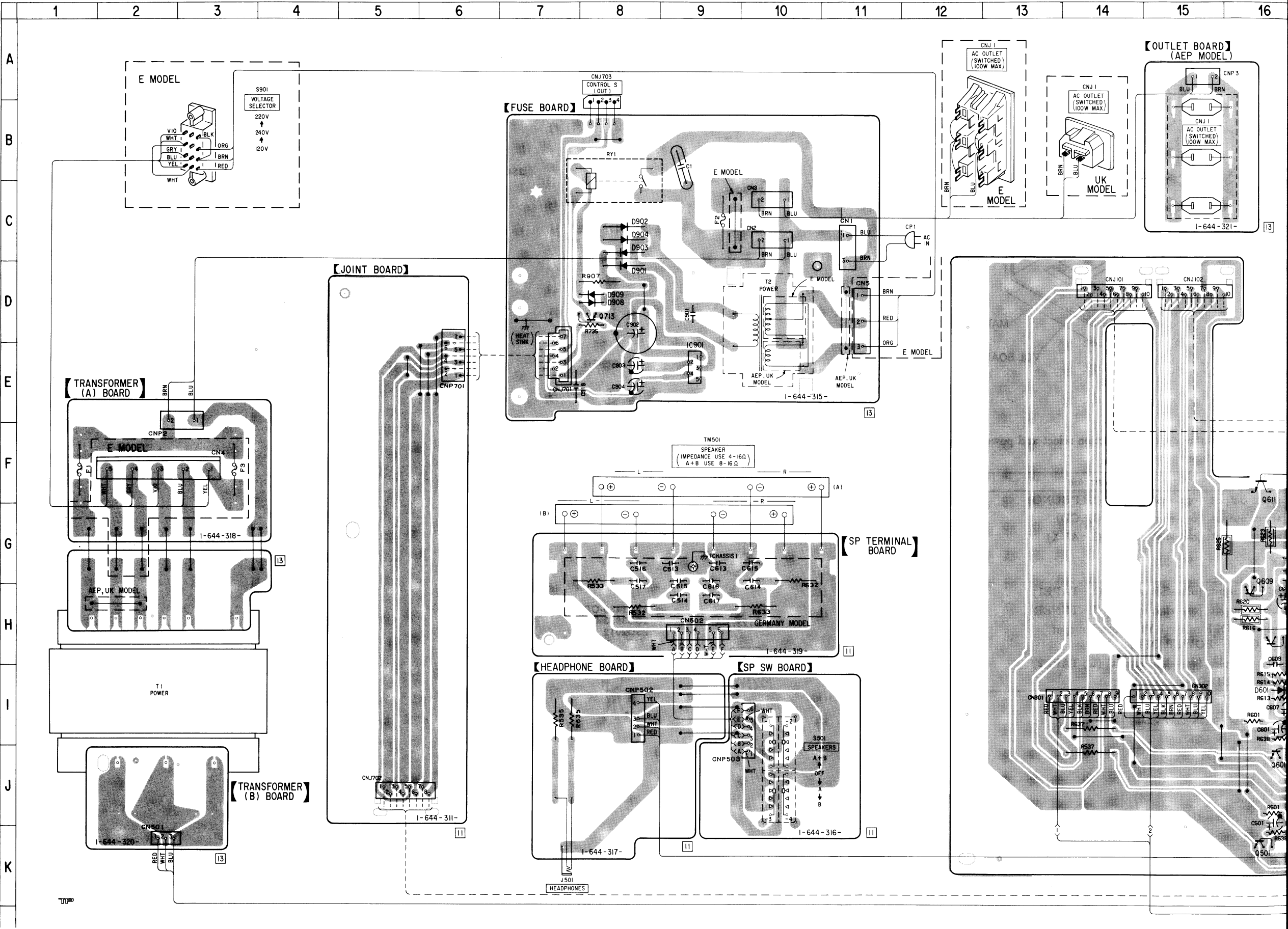
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D501	H - 21	D903	C - 8	Q605	I - 16
D502	H - 23	D904	C - 8	Q606	H - 16
D503	H - 23	D905	J - 18	Q607	F - 17
D504	I - 23	D906	H - 20	Q608	H - 17
D601	I - 16	D907	H - 19	Q609	H - 16
D602	H - 18	D908	D - 8	Q610	H - 18
D603	G - 18	D909	D - 8	Q611	F - 16
D604	G - 19			Q612	F - 18
D701	C - 17			Q613	G - 18
D702	D - 17	IC101	D - 23	Q614	I - 17
		IC102	D - 21		
D703	C - 17	IC701	D - 19	Q701	B - 17
D704	C - 17	IC702	I - 27	Q702	D - 17
D705	C - 17	IC703	C - 25	Q703	D - 17
D706	E - 17			Q704	E - 18
D707	C - 33	IC704	G - 35	Q705	E - 18
		IC801	J - 22		
D708	C - 29	IC901	E - 9	Q706	E - 17
D709	C - 30	IC902	K - 17	Q707	H - 27
D710	C - 31	IC903	J - 17	Q708	H - 27
D711	C - 34			Q709	I - 25
D712	C - 35			Q710	I - 25
		Q101	D - 18		
D713	J - 27	Q102	D - 18	Q711	I - 25
D714	J - 27	Q501	K - 16	Q712	J - 25
D715	J - 27	Q502	H - 22	Q713	D - 8
D716	J - 27	Q503	H - 22	Q801	J - 22
D717	J - 27				
		Q504	H - 23		
D718	H - 27	Q505	H - 21		
D719	D - 25	Q506	H - 21		
D720	C - 37	Q507	F - 21		
D722	C - 27	Q508	H - 22		
D723	C - 29				
		Q509	G - 21		
D724	C - 30	Q510	G - 23		
D725	C - 32	Q511	F - 20		
D726	C - 33	Q512	F - 22		
D727	C - 35	Q513	G - 23		
D728	I - 25				
D801	J - 20	Q514	I - 21		
D802	J - 23	Q601	J - 16		
D803	J - 23	Q602	I - 17		
D901	D - 8	Q603	I - 17		
D902	C - 8	Q604	I - 17		

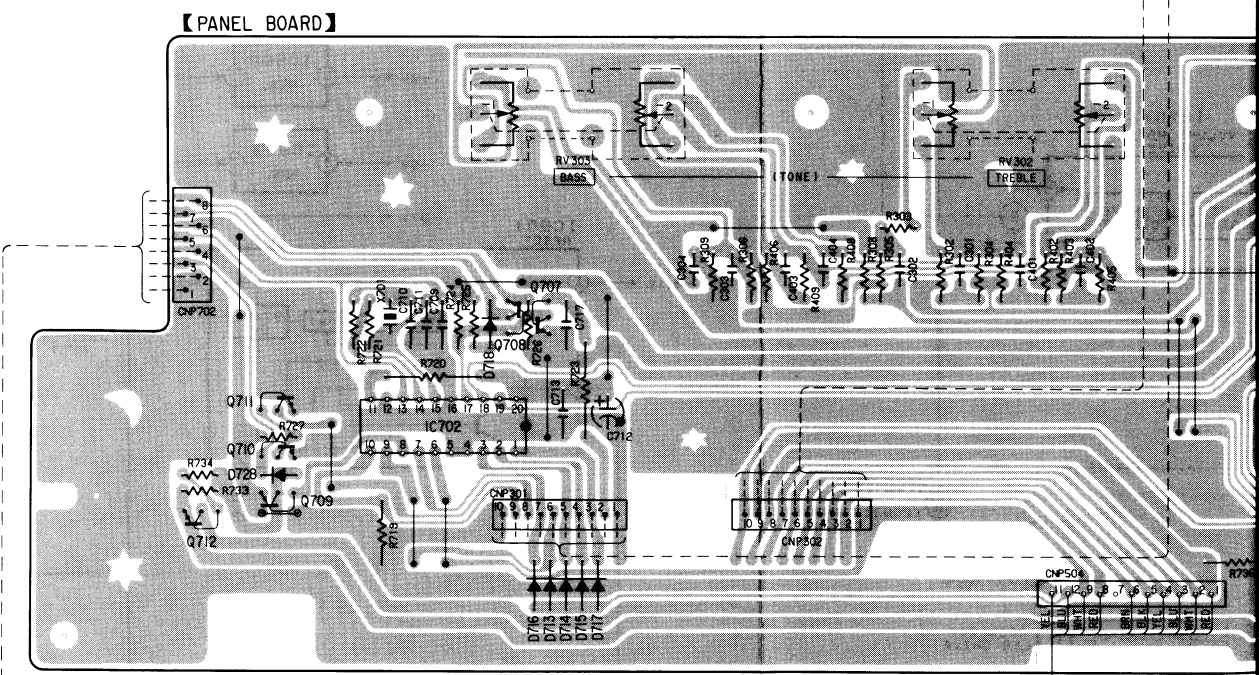
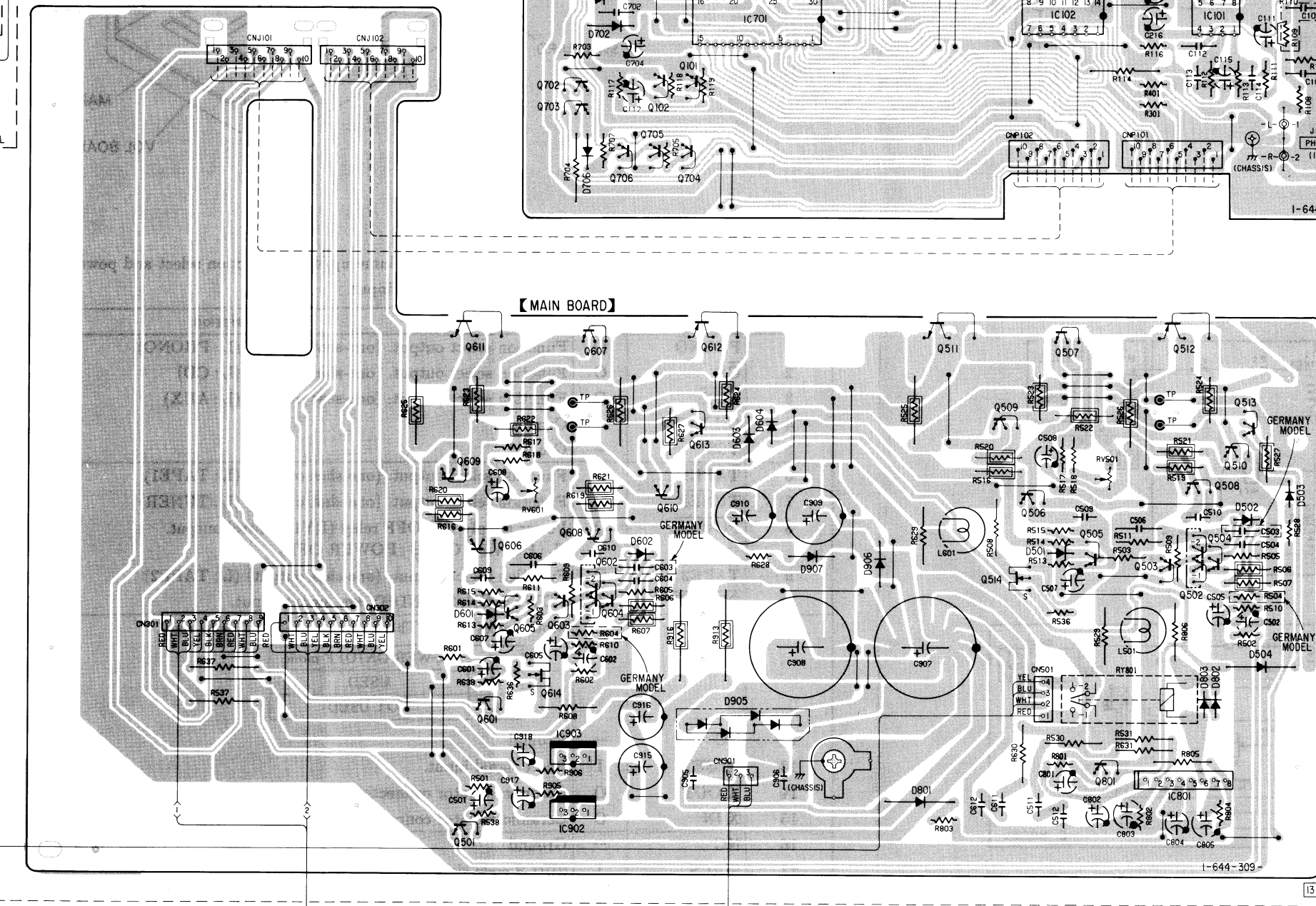
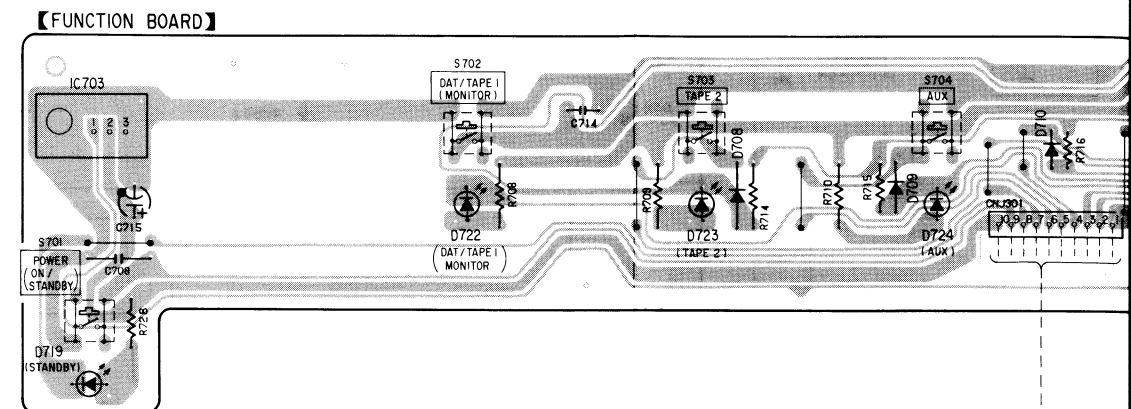
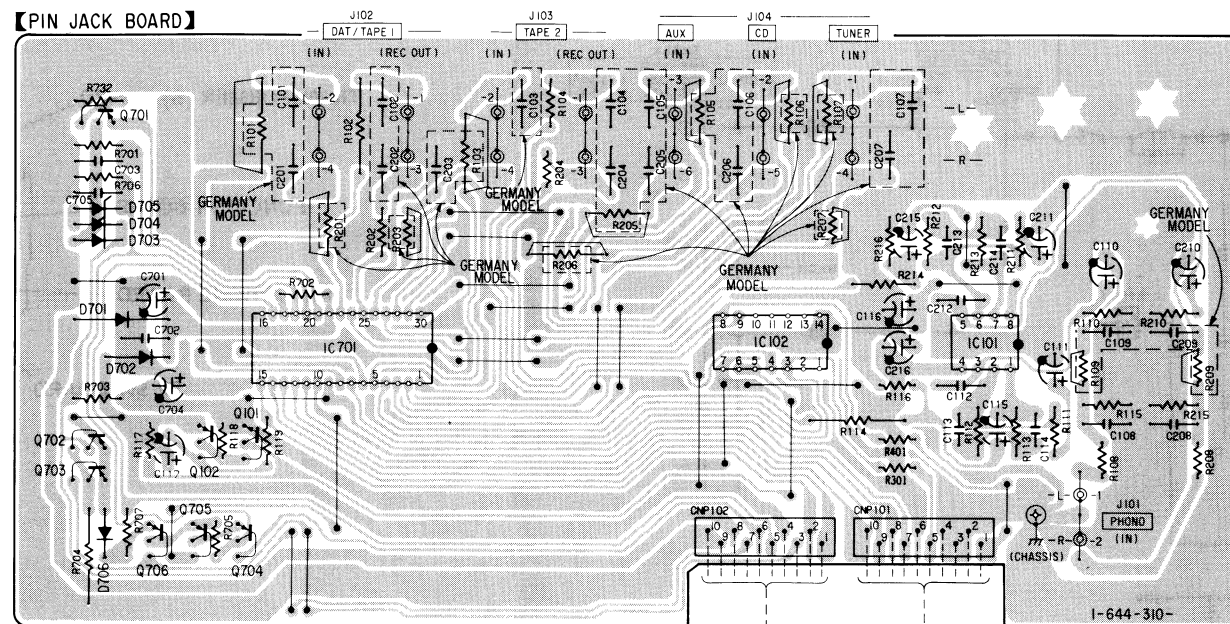
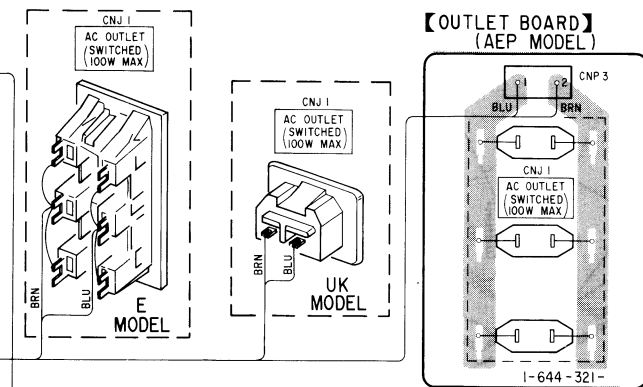
Note:

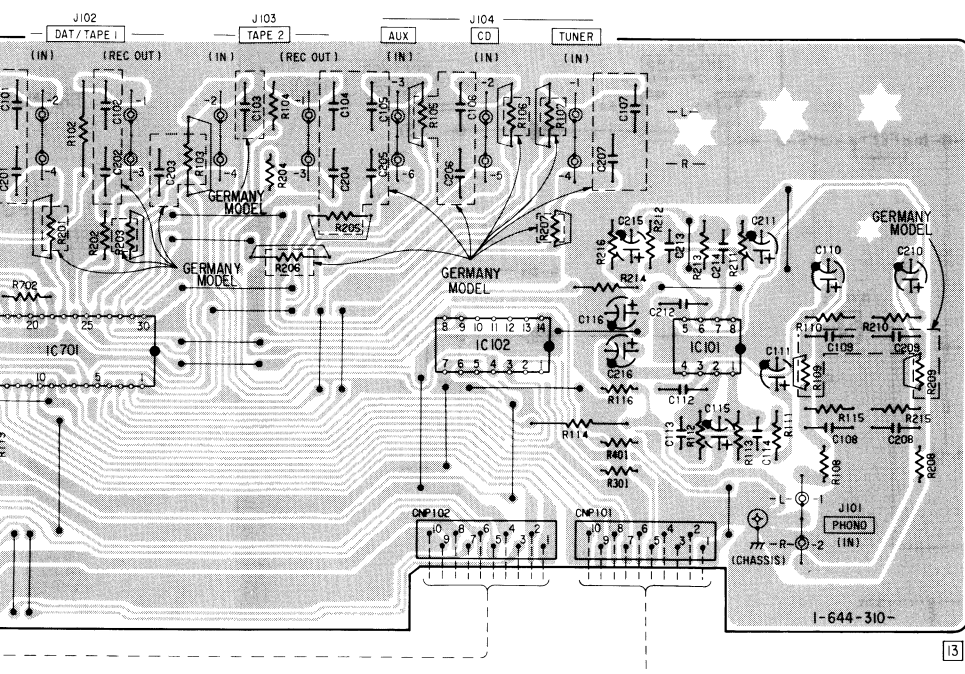
- : parts extracted from the component side.
- ⦿ : Pattern on the side which is seen.

3-3. PRINTED WIRING BOARDS

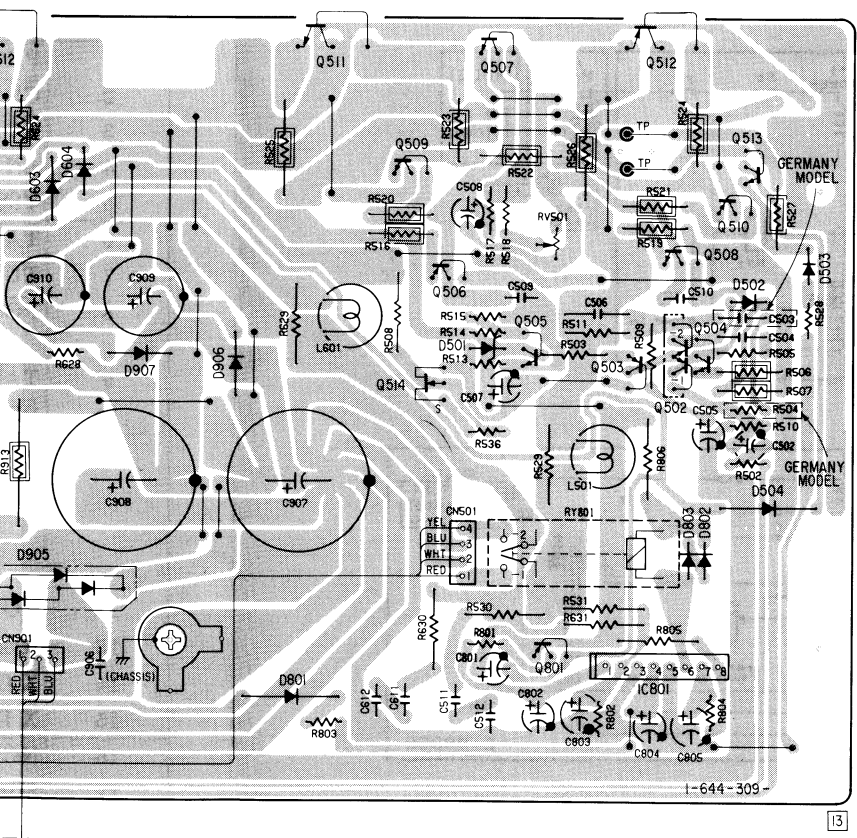
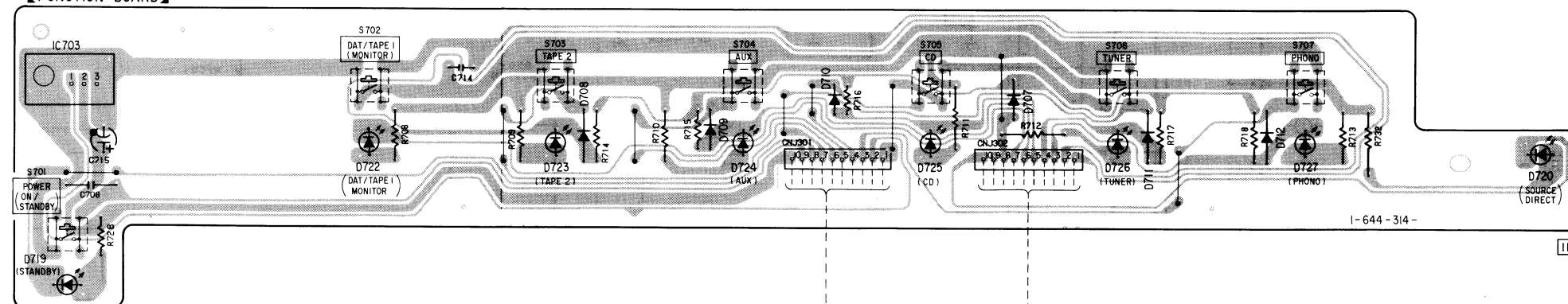
• Refer to Page 8 for Semiconductor Lead Layouts.



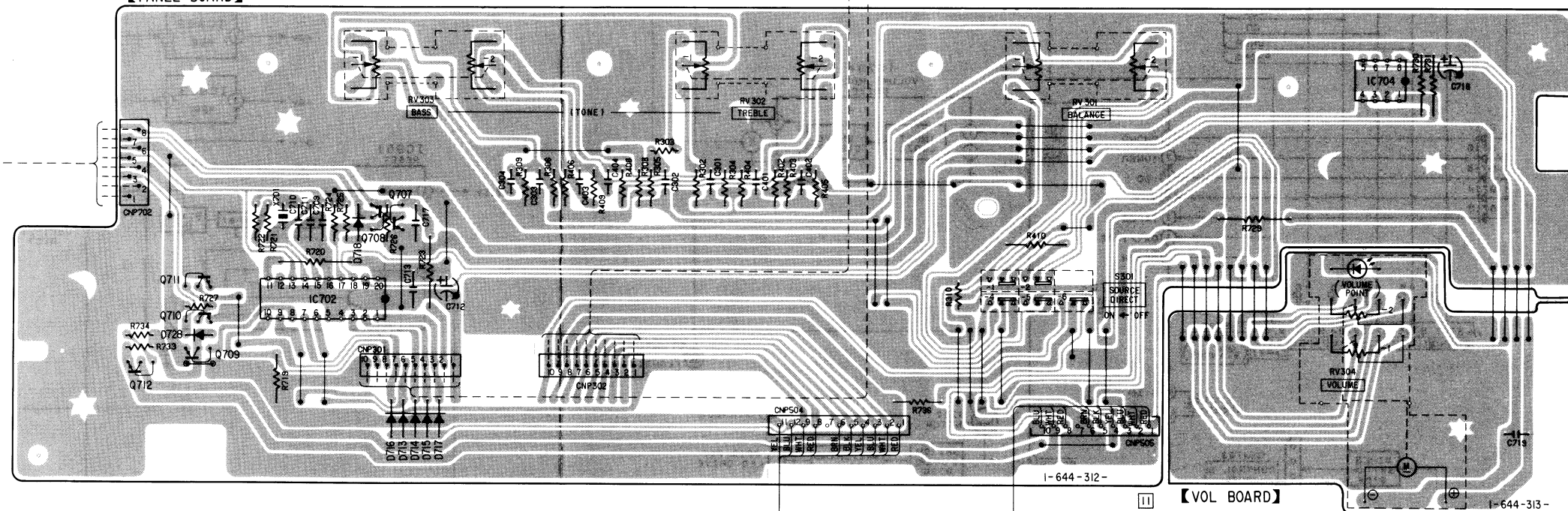




【FUNCTION BOARD】

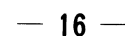


【PANEL BOARD】

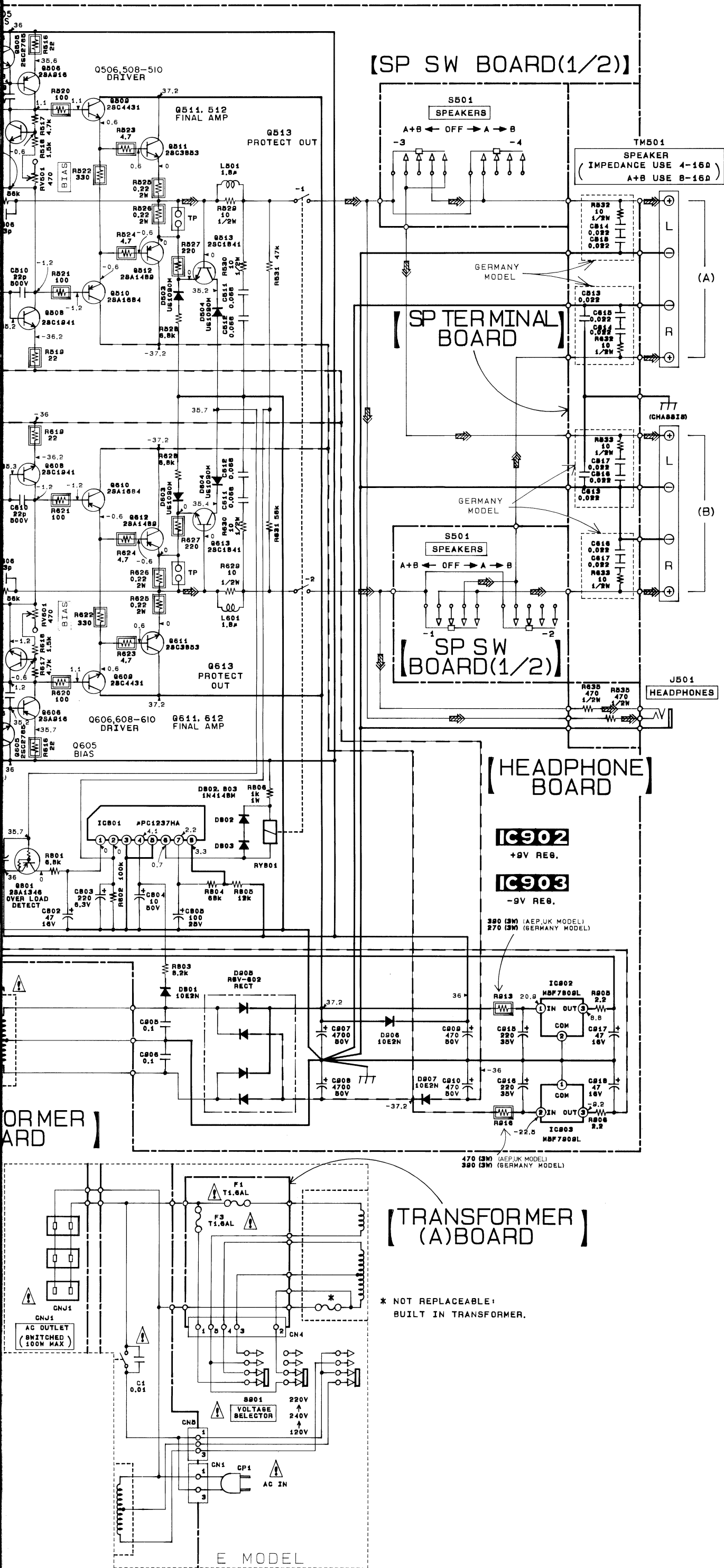


【VOL BOARD】

I-644-313-



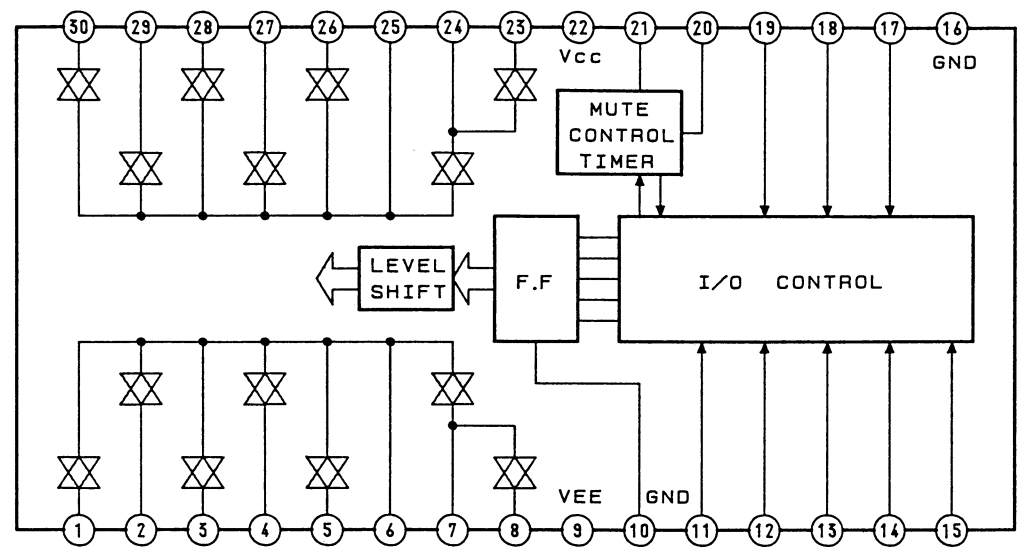




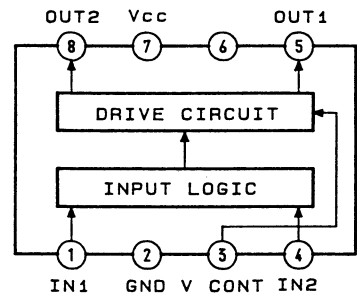
- Note :**
- All capacitors are in μF unless otherwise noted. pF: μF 50WV or less are not indicated except for electrolytics and tantalums.
 - All resistors are in Ω and $\frac{1}{4}W$ or less unless otherwise specified.
 - : nonflammable resistor.
 - : fusible resistor.
- Note :** The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.
- : B+ Line
 - : B- Line
 - : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
no mark : CD
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
 : PHONO

3-5. IC BLOCK DIAGRAM

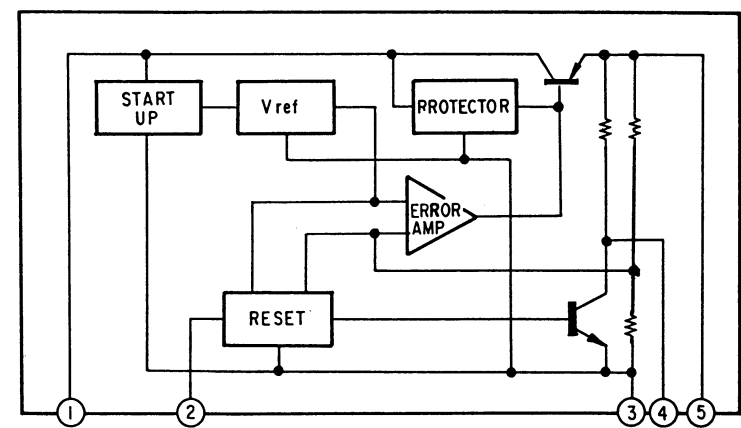
IC701 LC7818



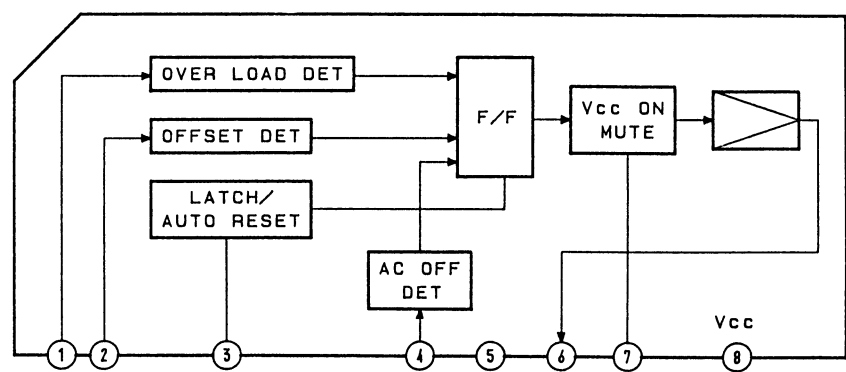
IC704 LB1639



IC901 L78MR-05



IC801 UPC1237HA



SECTION 4
EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Color indication of Appearance Parts
Example:
KNOB, BALANCE (WHITE) (RED)

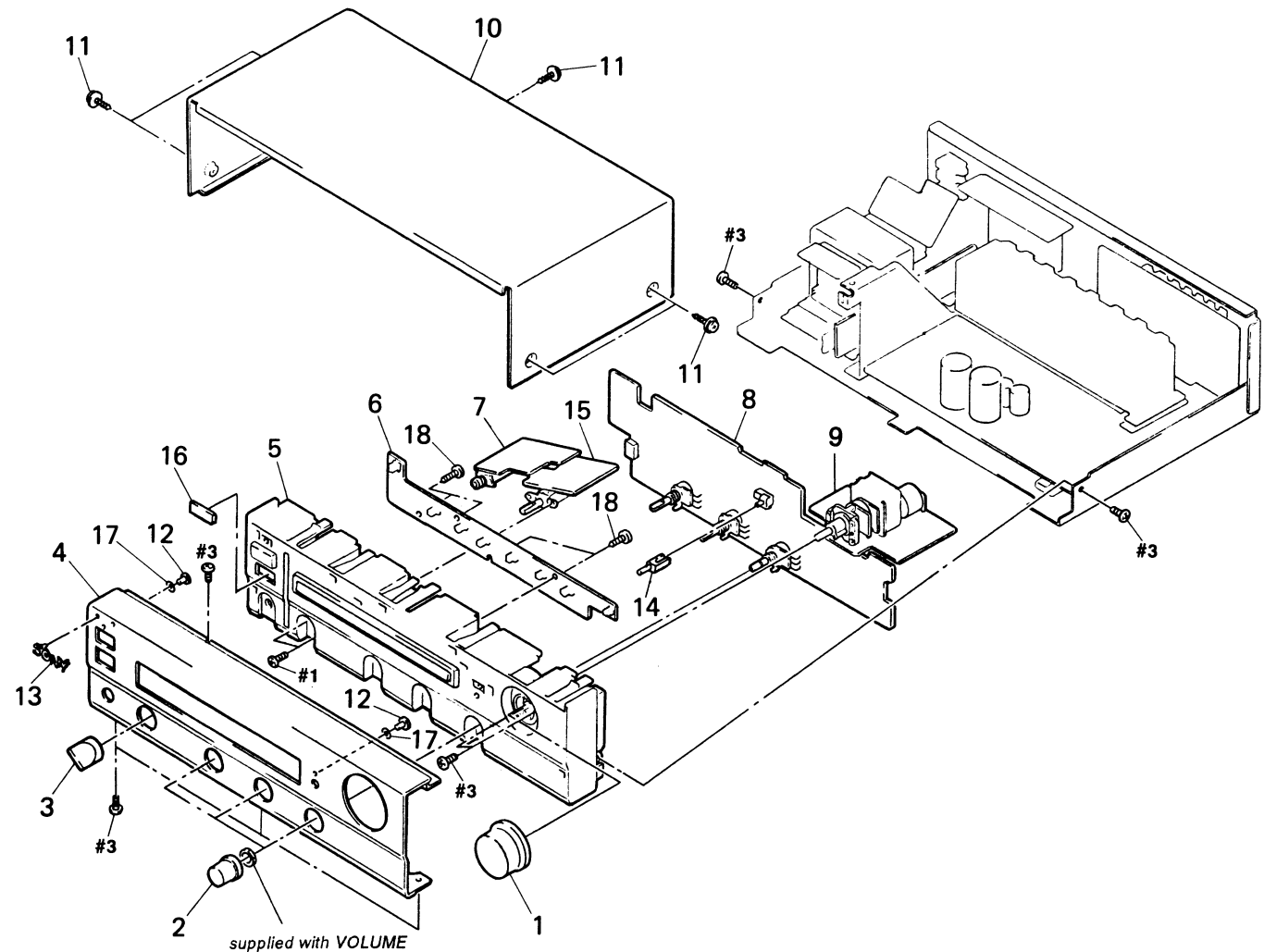
Parts color Cabinet's color

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

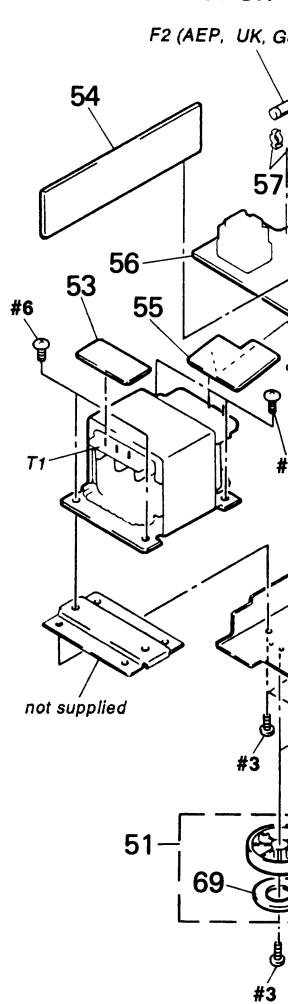
4-1. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	X-4942-798-1	KNOB (R53) ASSY	
2	4-945-173-01	KNOB (R21)	
3	4-916-745-01	KNOB (DIA. 21)	
4	4-952-244-01	PANEL, FRONT	
5	X-4942-672-1	PANEL (BASE) ASSY	
* 6	A-4347-667-A	FUNCTION BOARD, COMPLETE	
* 7	1-644-317-11	HEADPHONE BOARD	
* 8	A-4347-665-A	PANEL BOARD, COMPLETE	
* 9	1-644-313-11	VOL BOARD	

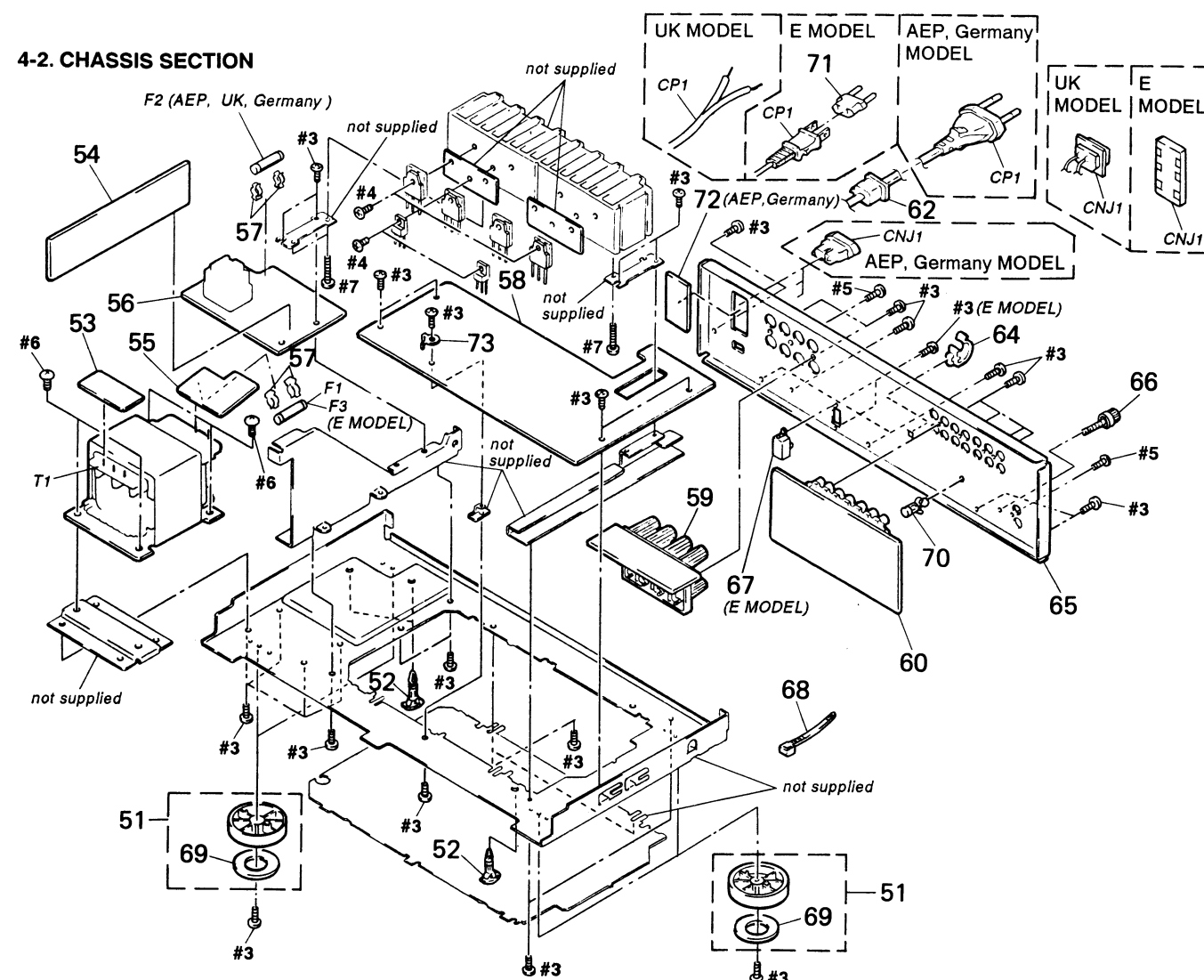
Ref. No.	Part No.	Description	Remark
10	4-929-294-11	CASE	
11	3-704-366-01	SCREW (CASE) (M3X8)	
12	4-938-518-01	INDICATOR (C)	
13	4-908-848-01	EMBLEM, SONY	
14	4-952-242-01	BUTTON (S/D)	
* 15	1-644-316-11	SP. SW. BOARD	
16	4-931-911-01	FILTER	
* 17	4-927-881-01	SHEET, ADHESIVE	
18	4-951-620-01	SCREW (2.6X8), +BVTP	

4-2. CHASSIS SECTION



Ref. No.	Part No.	Description
51	X-3304-938-2	FOOT
* 52	3-704-198-31	SUPP
* 53	1-644-320-11	TRAN
* 54	1-644-311-11	JOIN
* 55	1-644-318-11	TRAN
* 56	1-644-315-11	FUSE
* 57	1-533-213-31	HOLD
* 58	A-4347-660-A	MAIN
* 58	A-4347-661-A	MAIN
* 59	1-644-319-11	SP. T
* 60	A-4347-662-A	PIN
* 60	A-4347-663-A	PIN
* 62	3-703-244-00	BUSH
* 62	3-703-571-11	BUSH
* 64	4-949-235-01	HOOK
* 65	4-951-972-11	PANE
* 65	4-951-972-21	PANE
* 65	4-951-972-31	PANE
* 65	4-951-972-41	PANE

4-2. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
	51	X-3304-938-2 FOOT ASSY	
*	52	3-704-198-31 SUPPORT, PC	
*	53	1-644-320-11 TRANSFORMER (B) BOARD	
*	54	1-644-311-11 JOINT BOARD	
*	55	1-644-318-11 TRANSFORMER (A) BOARD	
*	56	1-644-315-11 FUSE BOARD	
*	57	1-533-213-31 HOLDER, FUSE	
*	58	A-4347-660-A MAIN BOARD, COMPLETE (E, AEP, UK)	
*	58	A-4347-661-A MAIN BOARD, COMPLETE (Germany)	
*	59	1-644-319-11 SP. TM. BOARD	
*	60	A-4347-662-A PIN JACK BOARD, COMPLETE (E, AEP, UK)	
*	60	A-4347-663-A PIN JACK BOARD, COMPLETE (Germany)	
*	62	3-703-244-00 BUSHING (2104), CORD (AEP, Germany, UK)	
*	62	3-703-571-11 BUSHING (S) (4516), CORD (E)	
*	64	4-949-235-01 HOOK	
*	65	4-951-972-11 PANEL, BACK (AEP)	
*	65	4-951-972-21 PANEL, BACK (Germany)	
*	65	4-951-972-31 PANEL, BACK (UK)	
*	65	4-951-972-41 PANEL, BACK (E)	

Remark

Ref. No.	Part No.	Description	Remark
	66	4-947-010-01 SCREW, FEEDER FIXED	
Δ	67	1-571-515-11 SWITCH, POWER VOLTAGE SELECTION (E)	
	68	3-655-653-21 BAND (TAITON), BINDING (UK, E)	
	69	4-923-836-11 CUSHION	
*	70	3-349-025-31 HOLDER, PC BOARD	
Δ	71	1-569-007-11 ADAPTER, CONVERSION 2P (E)	
*	72	1-644-321-11 OUTLET BOARD (AEP, Germany)	
*	73	4-942-204-01 PLATE, GROUND	
Δ	CNJ1	1-526-696-31 OUTLET, AC (3 GANG) (E)	
Δ	CNJ1	1-526-751-00 OUTLET, AC (UK)	
Δ	CNJ1	1-526-794-11 OUTLET, AC (AEP, Germany)	
Δ	CP1	1-558-946-21 CORD, POWER (UK)	
Δ	CP1	1-575-651-21 CORD, POWER (AEP, Germany)	
Δ	CP1	1-575-653-21 CORD, POWER (E)	
Δ	F1	1-532-259-00 FUSE, TIME-LAG (T1. 6A)	
Δ	F2	1-532-286-00 FUSE, TIME-LAG (T2. 5A) (AEP, Germany, UK)	
Δ	F3	1-532-259-00 FUSE, TIME-LAG (T1. 6A) (E)	
Δ	T1	1-450-953-11 TRANSFORMER, POWER (AEP)	
Δ	T1	1-450-954-11 TRANSFORMER, POWER (UK)	
Δ	T1	1-450-955-11 TRANSFORMER, POWER (Germany)	
Δ	T1	1-450-956-11 TRANSFORMER, POWER (E)	

SECTION 5 ELECTRICAL PARTS LIST

FUNCTION FUSE

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal oxide-film resistor
F: nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA: μ A, uPA: μ PA
uPB: μ PB, uPC: μ PC
uPD: μ PD
- CAPACITORS
uF: μ F
- COILS
uH: μ H

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4347-667-A	FUNCTION BOARD, COMPLETE		< CONNECTOR >			

< CONNECTOR >							
*	CNJ301	1-691-244-11 SOCKET, CONNECTOR 10P		< JACK >			
*	CNJ302	1-691-244-11 SOCKET, CONNECTOR 10P					
< DIODE >							
D707	8-719-987-63	DIODE 1N4148M		< DIODE >			
D708	8-719-987-63	DIODE 1N4148M					
D709	8-719-987-63	DIODE 1N4148M					
D710	8-719-987-63	DIODE 1N4148M					
D711	8-719-987-63	DIODE 1N4148M					
D712	8-719-987-63	DIODE 1N4148M					
D719	8-719-313-69	DIODE SEL3210S-CD					
D720	8-719-313-72	LED SEL3810A-CD					
D722	8-719-313-72	LED SEL3810A-CD					
D723	8-719-018-46	LED SEL3510C-CD		< FUSE >			
D724	8-719-018-46	LED SEL3510C-CD					
D725	8-719-018-46	LED SEL3510C-CD					
D726	8-719-018-46	LED SEL3510C-CD					
D727	8-719-018-46	LED SEL3510C-CD		< IC >			
< IC >							
IC703 8-749-920-83 IC GP1U52XB				< TRANSISTOR >			

*	1-644-315-11	FUSE BOARD		< RESISTOR >			

*	1-533-213-31	HOLDER, FUSE		< RELAY >			
< CAPACITOR >							
Δ	C1	1-161-744-00 CERAMIC	0.01uF 400V	< TRANSFORMER >			
C901	1-136-153-00	FILM	0.01uF 5% 50V				
C902	1-124-557-11	ELECT	1000uF 20% 25V				
C903	1-124-903-11	ELECT	1uF 20% 50V				
C904	1-124-477-11	ELECT	47uF 20% 25V				
C919	1-161-494-00	CERAMIC	0.022uF 25V				

Ref. No.	Part No.	Description	Remark			
*	1-644-317-11	HEADPHONE BOARD				

		< JACK >				
J501	1-507-863-51	JACK, PHONE (HEADPHONES)				
		< RESISTOR >				
R535	1-247-747-11	CARBON	470	5%	1/2W	
R635	1-247-747-11	CARBON	470	5%	1/2W	

*	1-644-311-11	JOINT BOARD				

		< CONNECTOR >				
CNJ702	1-568-319-11	SOCKET, CONNECTOR 8P				
CNP701	1-695-092-11	SOCKET, CONNECTOR 7P				

*	A-4347-660-A	MAIN BOARD, COMPLETE (E, AEP, UK)				
*	A-4347-661-A	MAIN BOARD, COMPLETE (Germany)				

*	4-942-204-01	PLATE, GROUND				
		< CAPACITOR >				
C501	1-124-927-11	ELECT	4.7uF	20%	100V	
C502	1-124-927-11	ELECT	4.7uF	20%	100V	
C503	1-162-282-31	CERAMIC	100PF	10%	50V (Germany)	
C504	1-161-375-00	CERAMIC	0.022uF	20%	50V	
C505	1-124-477-11	ELECT	47uF	20%	25V	
C506	1-162-193-31	CERAMIC	3.3PF	10%	50V	
C507	1-124-477-11	ELECT	47uF	20%	25V	
C508	1-124-477-11	ELECT	47uF	20%	25V	
C509	1-161-959-00	CERAMIC	22PF	10%	500V	
C510	1-161-959-00	CERAMIC	22PF	10%	500V	
C511	1-136-163-00	FILM	0.068uF	5%	50V	
C512	1-136-163-00	FILM	0.068uF	5%	50V	
C601	1-124-927-11	ELECT	4.7uF	20%	100V	
C602	1-124-927-11	ELECT	4.7uF	20%	100V	
C603	1-162-282-31	CERAMIC	100PF	10%	50V (Germany)	
C604	1-161-375-00	CERAMIC	0.022uF	20%	50V	
C605	1-124-477-11	ELECT	47uF	20%	25V	
C606	1-162-193-31	CERAMIC	3.3PF	10%	50V	
C607	1-124-477-11	ELECT	47uF	20%	25V	
C608	1-124-477-11	ELECT	47uF	20%	25V	
C609	1-161-959-00	CERAMIC	22PF	10%	500V	

HEADPHONE

JOINT

MAIN

Ref. No.	Part No.	Description	Remark		
C610	1-161-959-00	CERAMIC	22PF	10%	500V
C611	1-136-163-00	FILM	0. 068uF	5%	50V
C612	1-136-163-00	FILM	0. 068uF	5%	50V
C801	1-124-907-11	ELECT	10uF	20%	50V
C802	1-124-477-11	ELECT	47uF	20%	25V
C803	1-126-176-11	ELECT	220uF	20%	10V
C804	1-124-907-11	ELECT	10uF	20%	50V
C805	1-124-478-11	ELECT	100uF	20%	25V
C905	1-136-165-00	FILM	0. 1uF	5%	50V
C906	1-136-165-00	FILM	0. 1uF	5%	50V
C907	1-126-138-11	ELECT	4700uF	20%	50V
C908	1-126-138-11	ELECT	4700uF	20%	50V
C909	1-124-913-11	ELECT	470uF	20%	50V
C910	1-124-913-11	ELECT	470uF	20%	50V
C915	1-124-484-11	ELECT	220uF	20%	35V
C916	1-124-484-11	ELECT	220uF	20%	35V
C917	1-124-477-11	ELECT	47uF	20%	25V
C918	1-124-477-11	ELECT	47uF	20%	25V
< CONNECTOR >					
* CN301	1-564-512-11	PLUG, CONNECTOR 9P			
* CN302	1-564-513-11	PLUG, CONNECTOR 10P			
CN501	1-564-507-11	PLUG, CONNECTOR 4P			
* CN901	1-564-506-11	PLUG, CONNECTOR 3P			
CNJ101	1-568-321-11	SOCKET, CONNECTOR 10P			
CNJ102	1-568-321-11	SOCKET, CONNECTOR 10P			
< DIODE >					
D501	8-719-933-36	DIODE	HZS6B1L		
D502	8-719-987-63	DIODE	1N4148M		
D503	8-719-987-63	DIODE	1N4148M		
D504	8-719-987-63	DIODE	1N4148M		
D601	8-719-933-36	DIODE	HZS6B1L		
D602	8-719-987-63	DIODE	1N4148M		
D603	8-719-987-63	DIODE	1N4148M		
D604	8-719-987-63	DIODE	1N4148M		
D801	8-719-200-77	DIODE	10E2N		
D802	8-719-987-63	DIODE	1N4148M		
D803	8-719-987-63	DIODE	1N4148M		
D905	8-719-302-38	DIODE	RBV-602-01		
D906	8-719-200-77	DIODE	10E2N		
D907	8-719-200-77	DIODE	10E2N		
< IC >					
IC801	8-759-111-68	IC	uPC1237HA		
IC902	8-759-982-10	IC	RC7809FA		
IC903	8-759-604-49	IC	M5F7909L		

MAIN

Ref. No.	Part No.	Description	Remark			
< COIL >						
L501	1-420-872-00	COIL, AIR CORE				
L601	1-420-872-00	COIL, AIR CORE				
< TRANSISTOR >						
Q501	8-729-141-26	TRANSISTOR	2SC3622A-LK			
Q502	8-729-620-18	TRANSISTOR	2SA979-FG			
Q503	8-729-140-82	TRANSISTOR	2SA988-PAFAEA			
Q504	8-729-620-05	TRANSISTOR	2SC2603-EF			
Q505	8-729-620-05	TRANSISTOR	2SC2603-EF			
Q506	8-729-803-76	TRANSISTOR	2SA1371-E			
Q507	8-729-209-15	TRANSISTOR	2SD2012			
Q508	8-729-142-01	TRANSISTOR	2SC1941-LK			
Q509	8-729-141-46	TRANSISTOR	2SC4431-LK			
Q510	8-729-141-37	TRANSISTOR	2SA1684-LK			
Q511	8-729-015-83	TRANSISTOR	2SC3853-OPY			
Q512	8-729-015-80	TRANSISTOR	2SA1489-OPY			
Q513	8-729-140-84	TRANSISTOR	2SC1841-PAFAEA			
Q514	8-729-224-62	TRANSISTOR	2SK246-GR			
Q601	8-729-141-26	TRANSISTOR	2SC3622A-LK			
Q602	8-729-620-18	TRANSISTOR	2SA979-FG			
Q603	8-729-140-82	TRANSISTOR	2SA988-PAFAEA			
Q604	8-729-620-05	TRANSISTOR	2SC2603-EF			
Q605	8-729-620-05	TRANSISTOR	2SC2603-EF			
Q606	8-729-803-76	TRANSISTOR	2SA1371-E			
Q607	8-729-209-15	TRANSISTOR	2SD2012			
Q608	8-729-142-01	TRANSISTOR	2SC1941-LK			
Q609	8-729-141-46	TRANSISTOR	2SC4431-LK			
Q610	8-729-141-37	TRANSISTOR	2SA1684-LK			
Q611	8-729-015-83	TRANSISTOR	2SC3853-OPY			
Q612	8-729-015-80	TRANSISTOR	2SA1489-OPY			
Q613	8-729-140-84	TRANSISTOR	2SC1841-PAFAEA			
Q614	8-729-224-62	TRANSISTOR	2SK246-GR			
Q801	8-729-900-63	TRANSISTOR	DTA124ES			
< RESISTOR >						
R501	1-249-423-11	CARBON	3.3K	5%	1/4W	
R502	1-249-417-11	CARBON	1K	5%	1/4W	
R503	1-249-421-11	CARBON	2.2K	5%	1/4W	
R504	1-249-393-11	CARBON	10	5%	1/4W	
R506	1-247-704-11	CARBON	220	5%	1/4W	
R507	1-247-704-11	CARBON	220	5%	1/4W	
R508	1-249-490-11	CARBON	27K	5%	1/2W	
R509	1-249-413-11	CARBON	470	5%	1/4W	
R510	1-249-438-11	CARBON	56K	5%	1/4W	
R511	1-249-438-11	CARBON	56K	5%	1/4W	

Ref. No.	Part No.	Description	Remark			
R513	1-249-433-11	CARBON	22K	5%	1/4W	
R514	1-249-429-11	CARBON	10K	5%	1/4W	
R515	1-249-435-11	CARBON	33K	5%	1/4W	
R516	1-247-692-11	CARBON	22	5%	1/4W	
R517	1-249-425-11	CARBON	4.7K	5%	1/4W	
R518	1-249-419-11	CARBON	1.5K	5%	1/4W	
R519	1-247-692-11	CARBON	22	5%	1/4W	
R520	1-247-700-11	CARBON	100	5%	1/4W	
R521	1-247-700-11	CARBON	100	5%	1/4W	
R522	1-247-706-11	CARBON	330	5%	1/4W	
R523	1-249-455-11	CARBON	4.7	5%	1/4W	
R524	1-249-455-11	CARBON	4.7	5%	1/4W	
R525	1-216-361-00	METAL OXIDE	0.22	5%	2W	F
R526	1-216-361-00	METAL OXIDE	0.22	5%	2W	F
R527	1-247-704-11	CARBON	220	5%	1/4W	
R528	1-249-427-11	CARBON	6.8K	5%	1/4W	
R529	1-247-727-11	CARBON	10	5%	1/2W	
R530	1-247-727-11	CARBON	10	5%	1/2W	
R531	1-249-437-11	CARBON	47K	5%	1/4W	
R536	1-249-409-11	CARBON	220	5%	1/4W	
R537	1-249-417-11	CARBON	1K	5%	1/4W	
R538	1-249-423-11	CARBON	3.3K	5%	1/4W	
R601	1-249-423-11	CARBON	3.3K	5%	1/4W	
R602	1-249-417-11	CARBON	1K	5%	1/4W	
R603	1-249-421-11	CARBON	2.2K	5%	1/4W	
R604	1-249-393-11	CARBON	10	5%	1/4W	
R606	1-247-704-11	CARBON	220	5%	1/4W	
R607	1-247-704-11	CARBON	220	5%	1/4W	
R608	1-249-490-11	CARBON	27K	5%	1/2W	
R609	1-249-413-11	CARBON	470	5%	1/4W	
R610	1-249-438-11	CARBON	56K	5%	1/4W	
R611	1-249-438-11	CARBON	56K	5%	1/4W	
R613	1-249-433-11	CARBON	22K	5%	1/4W	
R614	1-249-429-11	CARBON	10K	5%	1/4W	
R615	1-249-435-11	CARBON	33K	5%	1/4W	
R616	1-247-692-11	CARBON	22	5%	1/4W	
R617	1-249-425-11	CARBON	4.7K	5%	1/4W	
R618	1-249-419-11	CARBON	1.5K	5%	1/4W	
R619	1-247-692-11	CARBON	22	5%	1/4W	
R620	1-247-700-11	CARBON	100	5%	1/4W	
R621	1-247-700-11	CARBON	100	5%	1/4W	
R622	1-247-706-11	CARBON	330	5%	1/4W	
R623	1-249-455-11	CARBON	4.7	5%	1/4W	
R624	1-249-455-11	CARBON	4.7	5%	1/4W	
R625	1-216-361-00	METAL OXIDE	0.22	5%	2W	F
R626	1-216-361-00	METAL OXIDE	0.22	5%	2W	F
R627	1-247-704-11	CARBON	220	5%	1/4W	
R628	1-249-427-11	CARBON	6.8K	5%	1/4W	
R629	1-247-727-11	CARBON	10	5%	1/2W	

Ref. No.	Part No.	Description	Remark		
R630	1-247-727-11	CARBON	10	5%	1/2W
R631	1-249-438-11	CARBON	56K	5%	1/4W
R636	1-249-409-11	CARBON	220	5%	1/4W
R637	1-249-417-11	CARBON	1K	5%	1/4W
R638	1-249-423-11	CARBON	3.3K	5%	1/4W
R801	1-249-427-11	CARBON	6.8K	5%	1/4W
R802	1-249-441-11	CARBON	100K	5%	1/4W
R803	1-249-428-11	CARBON	8.2K	5%	1/4W
R804	1-249-439-11	CARBON	68K	5%	1/4W
R805	1-249-430-11	CARBON	12K	5%	1/4W
R806	1-215-869-11	METAL OXIDE	1K	5%	1W F
R905	1-249-385-11	CARBON	2.2	5%	1/6W
R906	1-249-385-11	CARBON	2.2	5%	1/6W
R913	1-216-478-11	METAL OXIDE	390	5%	3W F (E, AEP, UK)
R913	1-216-477-11	METAL OXIDE	270	5%	3W F (Germany)
R916	1-215-915-11	METAL OXIDE	470	5%	3W F (E, AEP, UK)
R916	1-216-478-11	METAL OXIDE	390	5%	3W F (Germany)
< VARIABLE RESISTOR >					
RV501	1-238-011-11	RES, ADJ, CARBON 470 (DC BIAS L-CH)			
RV601	1-238-011-11	RES, ADJ, CARBON 470 (DC BIAS R-CH)			
< RELAY >					
RY801	1-515-533-11	RELAY			

*	1-644-321-11	OUTLET BOARD (AEP, Germany)			

< OUTLET >					
△	1-526-794-11	OUTLET, AC (AEP, Germany)			

*	A-4347-665-A	PANEL BOARD, COMPLETE			



< CAPACITOR >					
C301	1-130-481-00	MYLAR	0.0068uF	5%	50V
C302	1-130-474-00	MYLAR	0.0018uF	5%	50V
C303	1-136-159-00	FILM	0.033uF	5%	50V
C304	1-130-479-00	MYLAR	0.0047uF	5%	50V
C401	1-130-481-00	MYLAR	0.0068uF	5%	50V
C402	1-130-474-00	MYLAR	0.0018uF	5%	50V
C403	1-136-159-00	FILM	0.033uF	5%	50V
C404	1-130-479-00	MYLAR	0.0047uF	5%	50V
C708	1-161-494-00	CERAMIC	0.022uF		25V
C709	1-161-494-00	CERAMIC	0.022uF		25V

MAIN

OUTLET

PANEL

Ref. No.	Part No.	Description	Remark		
C710	1-162-284-31	CERAMIC	150PF	10%	50V
C711	1-162-284-31	CERAMIC	150PF	10%	50V
C712	1-124-477-11	ELECT	47uF	20%	25V
C713	1-161-494-00	CERAMIC	0.022uF		25V
C714	1-136-165-00	FILM	0.1uF	5%	50V
C715	1-124-477-11	ELECT	47uF	20%	25V
C717	1-161-494-00	CERAMIC	0.022uF		25V
C718	1-124-477-11	ELECT	47uF	20%	25V
< CONNECTOR >					
CNP301	1-695-415-11	PIN, CONNECTOR (PC BOARD)	10P		
CNP302	1-695-415-11	PIN, CONNECTOR (PC BOARD)	10P		
* CNP702	1-568-320-11	PLUG, CONNECTOR 8P			
< DIODE >					
D713	8-719-987-63	DIODE	1N4148M		
D714	8-719-987-63	DIODE	1N4148M		
D715	8-719-987-63	DIODE	1N4148M		
D716	8-719-987-63	DIODE	1N4148M		
D717	8-719-987-63	DIODE	1N4148M		
D718	8-719-987-63	DIODE	1N4148M		
D728	8-719-987-63	DIODE	1N4148M		
< IC >					
IC702	8-759-077-08	IC	M50761-291P		
IC704	8-759-820-62	IC	LB1639		
< TRANSISTOR >					
Q707	8-729-904-39	TRANSISTOR	DTC114TS		
Q708	8-729-904-39	TRANSISTOR	DTC114TS		
Q709	8-729-900-63	TRANSISTOR	DTA124ES		
Q710	8-729-806-30	TRANSISTOR	2SC4048		
Q711	8-729-900-80	TRANSISTOR	DTC114ES		
Q712	8-729-620-05	TRANSISTOR	2SC2603-EF		
< RESISTOR >					
R302	1-249-421-11	CARBON	2.2K	5%	1/4W
R303	1-249-426-11	CARBON	5.6K	5%	1/4W
R304	1-247-903-00	CARBON	1M	5%	1/4W
R305	1-247-903-00	CARBON	1M	5%	1/4W
R306	1-247-852-11	CARBON	7.5K	5%	1/4W
R308	1-247-870-11	CARBON	43K	5%	1/4W
R309	1-249-436-11	CARBON	39K	5%	1/4W
R310	1-249-437-11	CARBON	47K	5%	1/4W
R402	1-249-421-11	CARBON	2.2K	5%	1/4W
R403	1-249-426-11	CARBON	5.6K	5%	1/4W
R404	1-247-903-00	CARBON	1M	5%	1/4W
R405	1-247-903-00	CARBON	1M	5%	1/4W
R406	1-247-852-11	CARBON	7.5K	5%	1/4W

Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

PANEL

PIN JACK

Ref. No.	Part No.	Description	Remark		
R408	1-247-870-11	CARBON	43K	5%	1/4W
R409	1-249-436-11	CARBON	39K	5%	1/4W
R410	1-249-437-11	CARBON	47K	5%	1/4W
R708	1-249-414-11	CARBON	560	5%	1/4W
R709	1-249-411-11	CARBON	330	5%	1/4W
R710	1-249-411-11	CARBON	330	5%	1/4W
R711	1-249-411-11	CARBON	330	5%	1/4W
R712	1-249-411-11	CARBON	330	5%	1/4W
R713	1-249-411-11	CARBON	330	5%	1/4W
R714	1-249-433-11	CARBON	22K	5%	1/4W
R715	1-249-433-11	CARBON	22K	5%	1/4W
R716	1-249-433-11	CARBON	22K	5%	1/4W
R717	1-249-433-11	CARBON	22K	5%	1/4W
R718	1-249-433-11	CARBON	22K	5%	1/4W
R719	1-249-433-11	CARBON	22K	5%	1/4W
R720	1-249-433-11	CARBON	22K	5%	1/4W
R721	1-247-903-00	CARBON	1M	5%	1/4W
R722	1-249-423-11	CARBON	3.3K	5%	1/4W
R723	1-249-429-11	CARBON	10K	5%	1/4W
R724	1-249-417-11	CARBON	1K	5%	1/4W
R725	1-249-417-11	CARBON	1K	5%	1/4W
R726	1-249-393-11	CARBON	10	5%	1/4W
R727	1-249-425-11	CARBON	4.7K	5%	1/4W
R728	1-249-412-11	CARBON	390	5%	1/4W
R729	1-249-417-11	CARBON	1K	5%	1/4W
R730	1-249-421-11	CARBON	2.2K	5%	1/4W
R731	1-249-421-11	CARBON	2.2K	5%	1/4W
R732	1-247-750-11	CARBON	680	5%	1/2W
R733	1-249-441-11	CARBON	100K	5%	1/4W
R734	1-249-425-11	CARBON	4.7K	5%	1/4W
R736	1-249-419-11	CARBON	1.5K	5%	1/4W
< VARIABLE RESISTOR >					
RV301	1-238-513-11	RES, VAR, CARBON 150K/150K (BALANCE)			
RV302	1-238-514-11	RES, VAR 250K/250K (TREBLE)			
RV303	1-238-515-11	RES, VAR, CARBON 520K/520K (BASS)			
< SWITCH >					
S301	1-572-642-11	SWITCH, PUSH (1 KEY) (SOURCE DIRECT)			
S701	1-554-303-21	SWITCH, TACTILE (POWER)			
S702	1-554-303-21	SWITCH, TACTILE (DAT/TAPE1)			
S703	1-554-303-21	SWITCH, TACTILE (TAPE2)			
S704	1-554-303-21	SWITCH, TACTILE (AUX)			
S705	1-554-303-21	SWITCH, TACTILE (CD)			
S706	1-554-303-21	SWITCH, TACTILE (TUNER)			
S707	1-554-303-21	SWITCH, TACTILE (PHONO)			
< VIBRATOR >					
X701	1-577-077-11	VIBLATOR, CERAMIC			

Ref. No.	Part No.	Description	Remark		
*	A-4347-662-A	PIN JACK BOARD, COMPLETE (E, AEP, UK)			
*	A-4347-663-A	PIN JACK BOARD, COMPLETE (Germany)			

< CAPACITOR >					
C101	1-162-284-31	CERAMIC	150PF	10%	50V (Germany)
C102	1-162-284-31	CERAMIC	150PF	10%	50V (Germany)
C103	1-162-284-31	CERAMIC	150PF	10%	50V (Germany)
C104	1-162-284-31	CERAMIC	150PF	10%	50V (Germany)
C105	1-162-284-31	CERAMIC	150PF	10%	50V (Germany)
C106	1-162-284-31	CERAMIC	150PF	10%	50V (Germany)
C107	1-162-284-31	CERAMIC	150PF	10%	50V (Germany)
C108	1-162-285-31	CERAMIC	180PF	10%	50V
C109	1-162-282-31	CERAMIC	100PF	10%	50V (Germany)
C110	1-124-907-11	ELECT	10uF	20%	50V
C111	1-124-477-11	ELECT	47uF	20%	25V
C112	1-162-282-31	CERAMIC	100PF	10%	50V (AEP, UK, E)
C112	1-162-284-31	CERAMIC	150PF	10%	50V (Germany)
C113	1-130-480-00	MYLAR	0.0056uF	5%	50V
C114	1-130-473-00	MYLAR	0.0015uF	5%	50V
C115	1-124-927-11	ELECT	4.7uF	20%	100V
C116	1-124-477-11	ELECT	47uF	20%	25V
C117	1-124-925-11	ELECT	2.2uF	20%	100V
C201	1-162-284-31	CERAMIC	150PF	10%	50V (Germany)
C202	1-162-284-31	CERAMIC	150PF	10%	50V (Germany)
C203	1-162-284-31	CERAMIC	150PF	10%	50V (Germany)
C204	1-162-284-31	CERAMIC	150PF	10%	50V (Germany)
C205	1-162-284-31	CERAMIC	150PF	10%	50V (Germany)
C206	1-162-284-31	CERAMIC	150PF	10%	50V (Germany)
C207	1-162-284-31	CERAMIC	150PF	10%	50V (Germany)
C208	1-162-285-31	CERAMIC	180PF	10%	50V
C209	1-162-282-31	CERAMIC	100PF	10%	50V (Germany)
C210	1-124-907-11	ELECT	10uF	20%	50V
C211	1-124-477-11	ELECT	47uF	20%	25V
C212	1-162-282-31	CERAMIC	100PF	10%	50V (AEP, UK, E)
C212	1-162-284-31	CERAMIC	150PF	10%	50V (Germany)
C213	1-130-480-00	MYLAR	0.0056uF	5%	50V
C214	1-130-473-00	MYLAR	0.0015uF	5%	50V
C215	1-124-927-11	ELECT	4.7uF	20%	100V
C216	1-124-477-11	ELECT	47uF	20%	25V
C701	1-124-472-11	ELECT	470uF	20%	10V
C702	1-161-494-00	CERAMIC	0.022uF		25V
C703	1-161-494-00	CERAMIC	0.022uF		25V
C704	1-124-477-11	ELECT	47uF	20%	25V
C705	1-161-494-00	CERAMIC	0.022uF		25V

PIN JACK

SP. SW.

SP. TM.

Ref. No.	Part No.	Description	Remark
< CONNECTOR >			
* CNP101	1-568-322-21	PLUG, CONNECTOR 10P	
* CNP102	1-568-322-21	PLUG, CONNECTOR 10P	
< DIODE >			
D701	8-719-200-77	DIODE 10E2N	
D702	8-719-200-77	DIODE 10E2N	
D703	8-719-987-63	DIODE 1N4148M	
D704	8-719-987-63	DIODE 1N4148M	
D705	8-719-933-33	DIODE HZS6A1L	
D706	8-719-987-63	DIODE 1N4148M	
< IC >			
IC101	8-759-636-74	IC M5218AP-22	
IC102	8-759-801-01	IC LC4966	
IC701	8-759-802-52	IC LC7818	
< JACK >			
J101	1-573-141-21	JACK 2P (PHONO)	
* J102	1-573-142-21	JACK, PIN 4P (DAT/TAPE1)	
* J103	1-573-142-21	JACK, PIN 4P (TAPE2)	
J104	1-568-978-11	JACK 6P (TUNER/CD/AUX)	
< TRANSISTOR >			
Q101	8-729-900-36	TRANSISTOR DTC124ES	
Q102	8-729-900-63	TRANSISTOR DTA124ES	
Q701	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q702	8-729-900-63	TRANSISTOR DTA124ES	
Q703	8-729-900-63	TRANSISTOR DTA124ES	
Q704	8-729-900-63	TRANSISTOR DTA124ES	
Q705	8-729-900-63	TRANSISTOR DTA124ES	
Q706	8-729-900-63	TRANSISTOR DTA124ES	
< RESISTOR >			
R101	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R102	1-249-417-11	CARBON 1K 5% 1/4W	
R103	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R104	1-249-417-11	CARBON 1K 5% 1/4W	
R105	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R106	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R107	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R108	1-249-418-11	CARBON 1.2K 5% 1/4W	
R109	1-249-418-11	CARBON 1.2K 5% 1/4W (Germany)	
R110	1-249-441-11	CARBON 100K 5% 1/4W	
R111	1-249-416-11	CARBON 820 5% 1/4W	
R112	1-247-897-11	CARBON 560K 5% 1/4W	
R113	1-249-437-11	CARBON 47K 5% 1/4W	
R114	1-249-409-11	CARBON 220 5% 1/4W	
R115	1-249-441-11	CARBON 100K 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R116	1-249-441-11	CARBON 100K 5% 1/4W	
R117	1-249-433-11	CARBON 22K 5% 1/4W	
R118	1-249-433-11	CARBON 22K 5% 1/4W	
R119	1-249-441-11	CARBON 100K 5% 1/4W	
R201	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R202	1-249-417-11	CARBON 1K 5% 1/4W	
R203	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R204	1-249-417-11	CARBON 1K 5% 1/4W	
R205	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R206	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R207	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R208	1-249-418-11	CARBON 1.2K 5% 1/4W	
R209	1-249-418-11	CARBON 1.5K 5% 1/4W (Germany)	
R210	1-249-441-11	CARBON 100K 5% 1/4W	
R211	1-249-416-11	CARBON 820 5% 1/4W	
R212	1-247-897-11	CARBON 560K 5% 1/4W	
R213	1-249-437-11	CARBON 47K 5% 1/4W	
R214	1-249-409-11	CARBON 220 5% 1/4W	
R215	1-249-441-11	CARBON 100K 5% 1/4W	
R216	1-249-441-11	CARBON 100K 5% 1/4W	
R301	1-249-405-11	CARBON 100 5% 1/4W	
R401	1-249-405-11	CARBON 100 5% 1/4W	
R701	1-247-901-11	CARBON 820K 5% 1/4W	
R702	1-249-433-11	CARBON 22K 5% 1/4W	
R703	1-249-441-11	CARBON 100K 5% 1/4W	
R704	1-249-433-11	CARBON 22K 5% 1/4W	
R705	1-249-429-11	CARBON 10K 5% 1/4W	
R706	1-249-429-11	CARBON 10K 5% 1/4W	
R707	1-249-433-11	CARBON 22K 5% 1/4W	
R732	1-249-433-11	CARBON 22K 5% 1/4W	

* 1-644-316-11 SP. SW. BOARD

< SWITCH >

S501 1-692-168-11 SWITCH, ROTARY SLIDE (SPEAKER)

* 1-644-319-11 SP. TM. BOARD

< CAPACITOR >

C513	1-136-157-00	FILM 0.022uF 5% 50V (Germany)
C514	1-136-157-00	FILM 0.022uF 5% 50V (Germany)
C515	1-136-157-00	FILM 0.022uF 5% 50V (Germany)
C516	1-136-157-00	FILM 0.022uF 5% 50V (Germany)
C517	1-136-157-00	FILM 0.022uF 5% 50V (Germany)

SP. TM.

TRANSFORMER (A)

TRANSFORMER (B)

VOL

Ref. No.	Part No.	Description	Remark
C613	1-136-157-00	FILM 0.022uF 5% 50V (Germany)	
C614	1-136-157-00	FILM 0.022uF 5% 50V (Germany)	
C615	1-136-157-00	FILM 0.022uF 5% 50V (Germany)	
C616	1-136-157-00	FILM 0.022uF 5% 50V (Germany)	
C617	1-136-157-00	FILM 0.022uF 5% 50V (Germany)	

< CONNECTOR >

* CN502 1-564-509-11 PLUG, CONNECTOR 6P

< RESISTOR >

R532	1-247-727-11	CARBON 10 5% 1/2W (Germany)	
R533	1-247-727-11	CARBON 10 5% 1/2W (Germany)	
R632	1-247-727-11	CARBON 10 5% 1/2W (Germany)	
R633	1-247-727-11	CARBON 10 5% 1/2W (Germany)	

< TERMINAL >

TM501	1-537-235-11	TERMINAL BOARD (SP) (E, AEP1, UK)	
TM501	1-537-227-11	TERMINAL BOARD (SP) (AEP2)	
TM501	1-537-228-11	TERMINAL BOARD (SP) (Germany)	

* 1-644-318-11 TRANSFORMER (A) BOARD

* 1-533-213-31 HOLDER, FUSE

< CONNECTOR >

* CN4 1-580-633-11 PIN, CONNECTOR 5P (E)

< FUSE >

△F1	1-532-259-00	FUSE, TIME-LAG (T1.6A)	
△F3	1-532-259-00	FUSE, TIME-LAG (T1.6A) (E)	

* 1-644-320-11 TRANSFORMER (B) BOARD

NOTE:

●AEP2: Model for Scandinavian countries,
Switzerland, Spain and Portugal

●AEP1: Model for other European countries

Ref. No.	Part No.	Description	Remark
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* 1-644-313-11 VOL BOARD

< CAPACITOR >

C719 1-136-165-00 FILM 0.1uF 5% 50V

< VARIABLE RESISTOR >

RV304 1-241-921-11 RES, VAR, CARBON 120K/120K (VOLUME)

MISCELLANEOUS

△67	1-571-515-11	SWITCH, POWER VOLTAGE SELECTION (E)	
△71	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
△CNJ1	1-526-696-31	OUTLET, AC (3 GANG) (E)	
△CNJ1	1-526-751-00	OUTLET, AC (UK)	

△CP1	1-558-946-21	CORD, POWER (UK)	
△CP1	1-575-651-21	CORD, POWER (AEP, Germany)	
△CP1	1-575-653-21	CORD, POWER (E)	

△T1	1-450-953-11	TRANSFORMER, POWER (AEP)	
△T1	1-450-954-11	TRANSFORMER, POWER (UK)	
△T1	1-450-955-11	TRANSFORMER, POWER (Germany)	
△T1	1-450-956-11	TRANSFORMER, POWER (E)	

ACCESSORIES & PACKING MATERIALS

1-693-131-11	REMOTE COMMANDER (RM-S311)	
2-181-754-01	COVER, BATTERY (REMOTE COMMANDER)	
3-755-074-11	MANUAL, INSTRUCTION (E, AEP, UK)	
	(ENGLISH/FRENCH/SPANISH/PORTUGUESE)	
3-755-074-41	MANUAL, INSTRUCTION (AEP, Germany)	
	(GERMAN/DUTCH/SWEDISH/ITALIAN)	

*	4-945-810-02	CUSHION (LEFT)	
*	4-945-811-01	CUSHION (RIGHT)	
*	4-951-289-01	INDIVIDUAL CARTON	

HARDWARE LIST

#1	7-682-548-09	SCREW +B 3X8	
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#4	7-685-648-79	SCREW +BVTP 3X12 TYPE2	
#5	7-621-849-00	SCREW (BV/RING)	
#6	7-682-560-04	SCREW +BVTT 4X6 (S)	
#7	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.